Scott. 17-43—31,000—

V P.H

L. S. Dy. (1922) Department.

Mis SERIES.

G.O. No. 90901 Mis

DATED 29-6-22

[Despatch Abstract.]

[illegible]

[illegible]

ay

P.W.D.

No. 1676 WKS B/20-1

W-S-20.

Memo

With reference to item 76 (Mangalore Water Supply Scheme) in the report of progress of Sanitary Schemes recorded in G.O. No 1970 M dy 3-12-19, the Sanry. Engineer is requested to report in what stage the matter stands at present. He is also informed that if the Scheme is not yet ready for submission to Govt, it should be expedited.

15/5/20

6/5/20

for DS.

To the Sanry Engineer

two weeks

DESPATCHED
10 MAY 1920

1st Reminder 14/6/20.
2 " 4/8/20

C [redacted] 9,678 20 11-19.

PUBLIC WORKS **DEPARTMENT.**

SECRETARY TO GOVT. MADRAS
31.7.20
PUBLIC WORKS DEPARTMENT

Received 19 . *Registered* 19

C.W. 2464 No. B
3-7-20

Subject.

MANGALORE WATER SUPPLY SCHEME.

ENCLOSURES.
No. Copy of note by D.S.E. S.W. — 1
Spare copies

No. 1675

Station CHEPAUK, MADRAS. *Dated the* 2 - JULY 1920

From (Name) R.F.Stoney, Esquire.

(Designation) Ag.Sanitary Engineer to Govt.

To The JOINT Secretary to the Government of Madras,

PUBLIC WORKS Department.

Sir,

With reference to P.W.D.Memorandum No.1676 Wks/B/20-1 dated 10-5-20 and in continuation of this office No. 605-C dated 25-6-20, I have the honour to forward herewith for your information copy of note S.W.No.311 S.E. dated 25-6-20 by the Deputy Sanitary Engineer, Southern and Western Circles re: the present stage of progress of the investigation of Mangalore water supply scheme.

I have the honour to be,
Sir,
Your most obedient servant,

R. F. Stoney 2/7/20

P.S.N./2-7-20. Ag.Sanitary Engineer to Govt.

3.7.20.

4

Copy of note S.W.No. 311 S.E. dated 25-6-20 from the Dy. Sanitary Engineer, Southern & Western Circles.

---

* * *

The investigation has practically been completed and a report is under preparation which will be submitted in the course of a month.

---

5 - 4

No. 1676 W&B '20-3 P.W.D.

Memo — 1-5-'20 —

With reference to the correspondence ending with his letter No. 617 Dy 2.7.20, the Sanitary Engineer is requested to expedite submission of the report on the investigation of the water supply scheme, Mangalore.

Rec'd on 27.8.20

Rec'd on 30.8.20

Rec'd on 8.X.20

To

The Sanitary Engineer

DESPATCHED

4 SEP 1920

Returned in 2 weeks.

2-16.

5 / 4

C.F.—31

PUBLIC WORKS **DEPARTMENT.**

Received ..... 191 . *Registered* ..... 191 .

Subject.

Langalore watersupply Investigation

Preliminary investigation of the -

WHO SECTION
15 JUL 1921
2245

ENCLOSURES
No. 1 report
3 plans
Total.. 4
Spare copies

No. 478. G

Station Chepauk, Madras , *Dated the* 12th July 1921.

From (Name) R.F. Stoney Esq.,

(Designation) Offg. Sanitary Engineer to Govt.

To The CHIEF ENGINEER,

Public Works Department,
Madras.

Sir,

With reference to correspondence ending with Public Works Department Memorandum No.1676 Wks./B-20-3 dated Ist September 1920, I have the honour to forward herewith report of the Deputy Sanitary-Engineer, Southern and Western circles with plans on the investigation of the Hassanur valley as a source of watersupply to Langalore-ordered in G.O.No. 1162-M.Mis., dated 7-7-1917. R

2. The soil and the subsoil at site of the reservoir is laterite in various stages of disintegration and porosity. Except where it is weathered-

weathered by exposure, laterite is probably compact and fairly homogenous and should be watertight. An experiment, however, might be made to test this by putting down a pipe and filling it with water to the head required and watching the behaviour. On receipt of orders further investigation if required will be carried out.

I have the honour to be,

Sir,

Your most obedient servant,

P. S. Krishnaswami

11.7.21

for offg. Sanitary Engineer to Govt.

MSV/9-7-21.

11/7

MANGALORE WATER SUPPLY.

The investigation ordered in G.O.No.1162-M.Mis. dated 7th July 1917 has been carried out. The Hassamar valley has been -- hydrologically surveyed. A contour of the valley is shown in plan S.W.No.49 of 1920. The valley does not lend itself for the formation of one large sized tank. The contours suggest naturally the formation of an upper and a lower tank with minimum length of bunds of average height as shown in plans S.W.Nos.49 and 51 of 1920 - the former spilling into the latter from which the Town supply can be drawn to command the Light-house Hill - site selected for the location of the Service Reservoir - by about 30 feet in a distance of about 7½ miles along the alignment for a gravitation main.

2. The catchment available in the valley is only about 250 -- acres. It is clean and very favourably situated with its steep slopes in rocky soil to get a good run off say about 50% in the -- average. For purposes of calculations the rainfall average of -- 3 dry years works out at about 115 inches while the general average for the 20 years (1899 - 1918) works at about 126 inches - the -- maximum being about 151 inches, and the minimum about 89 inches. Though the rainfall is spread over about 6 months and even more the bulk of the fall as well as its intensity is confined to 4 months from June to September when apparently without any storage it should be possible to feed the main. Storage will be needed then for at least 8 months in the year. The most that this valley can therefore ordinarily be expected to economically respond for the Town will be to supply 60,000 people with 10 gallons of water per head per day. In a year provision should therefore be made to draw off about 35×10^6 C.ft. of water of which 23.3×10^6 C.ft. should be -- stored at the end of the rainy season. This storage however may not be possible during a year like 1899 when there was only about 89 inches of rainfall of which about 37 inches fell in June only. During such exceptional periods of drought the Town supply must -- necessarily diminish. There is again an apparently adverse factor

to be reckoned with at any rate at the beginning. The soil and the sub-soil being more or less of laterite in various stages of disintegration and porosity, until the bed gets clogged up, springs must abstract some quantity of unauthorised water which after all may not be very much since the valley holds some surface water even in the driest months -- in its present neglected state. Just as springs tend to drain away -- some water from the valley there are also in evidence some that feed -- this valley even some considerable time after the rains. In any case provision is made for a total evaporation and absorption loss of 6'-8" during the period supply depends on storage.

3. The upper tank is capable of storing about 10×10^6 C.ft. of water with its F.T.L. at R.L. 285.00 and its catchment area of about 110 acres while the Lower tank is capable of storing about 23×10^6 C.ft. of water with its F.T.L. at R.L.251.00 and combined catchment area of about 250 acres as shown in plan S.W.No.49 of 1920.

4. It is rather disappointing that such an ideal site could not be safely depended upon for a 15 gallons supply for the Town though at -- first sight it seems to hold out very great possibilities. Mr.Stoney while Sanitary Engineer, as also Mr.Hutton before him, on inspection of the site appear to have been struck with its possibilities. It is just possible that more may be got out of it.

5. As regards the main to carry the water to the Service Reservoir its alignment will have to be somewhat ziz-zag to get round intervening hills. The funds available were just sufficient to determine roughly that it is possible to hug the Gurupur river and go practically along Bajpe road to Light-house Hill as shown in plan S.W.No.50 of 1920. The distance of the main will be about 7½ miles.

6. The results of the investigation as far as carried out seem to show that it is safer to reckon on a 10 gallons scheme for 60,000 people from this area than the usual 15 gallons. Its cost will be approximately Rs.10,50,000, to instal and Rs.4,500 to maintain annually, and the further investigation, if this source is finally decided upon, will cost about Rs.2,000 as detailed below:--

1. To instal.

Earthen dams for upper and lower tanks.	Rs.	80,000
Surplus works, tower sluice, Quarters for the Head works establishment etc.	"	60,000
Filter bed	"	40,000
Gravitation main 40,000' long ...	"	430,000
Service Reservoir	"	30,000
Distribution system 5 miles ...	"	125,000
Unforseen works	"	22,697
Contingencies & petty supervision at 7½%	"	59,077
Centage charges at 24% ...	"	203,226
Total ...	Rs	10,50,000

2. To maintain

Establishment.

At Head Works.

1 Superintendent on Rs.40 ...	Rs.40	
4 Lascars on Rs.12 ...	" 48	
In Town		
1 Supervisor on Rs.150 (1/3 charged to W.W.) ...	" 50	
10 Turn-cocks and fountain cleaners on Rs.12 ...	" 120	
Total ...	Rs.258 x 12	3,096
Repairs to pipe line, maintenance of filters, tank bunds etc. ...		1,404
Total ...	Rs.	4,500

3. To further investigate.

1 Surveyor for 4 months at Rs.106/4/- ...	425
6 Lascars for 3 months at Rs.12 ...	216
1 Lascar for 1 month at Rs.12 per mensem	12
30 Borings at site of dams etc., at Rs.20 each.	600
Transport of tools and plant ...	150
T.A.Stationery and contingencies ...	210
Centage charges at 24% ...	387
Total Rs.	2,000

11.12.20

Deputy Sanitary Engineer,
Southern & Western Circles.

11.12.20

10

DRAFT FOR APPROVAL.

C.F. 20—4-2-14.

Office.

Enclosures.

Despatch No.

When given to fair-copying

Fair-copied by

Fair copy compared by

When despatched

Current
Register No. 2245 W&P dated 15-2-21

From The San: Engineer & Governmt
No 478 G of 12-2-21.

Subject.

Mangalore water supply Scheme

To

THE

Memorandum

2245 W&P B No 1 of 25.10.21.

The San. Engineer is requested to arrange at once to take boreholes at 500 ft. intervals all along the line of lower dam site, Mangalore water supply scheme, down to granite & upto 266.00 contour each side of the line as dam there is not likely to be constructed.

2- The catchment and watershed area of lower reservoir in 36 Variations upto 266.00 should be calculated & reported.

3. The above investigation should be done at once & the results reported at an early date.

4. It will be necessary to have an impermeable wall of puddled clay (or masonry) from granite bed to F.T.L, or a masonry dam founded on granite. The San Engr should report if suitable clay is available in the near vicinity at reasonable cost, if not he should report the cost of a solid granite masonry dam

5 The 3 plans submitted with a

Letter No 478 G 8/12 2/21 are sent herewith for reference & return.

C.T.N
25/10

for C.E.

25/10/21

To
The San: Engineer to Government
with 3 plans.

D 28/10/21

SD.

To remind after 4 months

1st Reminder sent 3/3/22.

2-16.

12 48 12

C.F.—31

Public Works DEPARTMENT.

Received ..... 191 . *Registered* ..... 191 .

Subject.

Mangalore water supply investigation.

WH&B [illegible]
16 MAY 1922
CURRENT NO.
1028

ENCLOSURES
No.
Spare copies

No. 3069

Station Chepauk , *Dated the* 15 May 1922.

From (Name) J.S. Westerdale Esq., B.Sc.M.Inst.C.E.
(Designation) Sanitary Engineer to Govt.

To The CHIEF ENGINEER,
Public Works Department. Madras.

Sir,

In regard to the further investigation of Mangalore Water Supply Scheme ordered in P.W.Memorandum No.2245 Wks/B-1., dated 25th October 1921, I have the honor to bring the following to your notice.

2. As there was no balance available for expenditure in the amount allotted in G.O.No. 1162-M.Mis., dated 7-7-17, a supplementary estimate amounting to Rs.1200 was prepared by the Deputy Sanitary Engineer and sanctioned by me in C.R.No.15 of 21-22. The Chairman, Municipal Council Mangalore was addressed to arrange for the provision of necessary funds as per

per para 2 of G.O. No.1185-M.Press., dated 27th August 1920. The amount has since been placed at the disposal of this Department by the Chairman and the work also is in progress.

3. The Accountant General now raises an audit objection that the further investigation requires the sanction of Government and points out that para 2 of G.O. No.1185 M- dated 27-8-20 does not cover the case in point as it refers to allotment of funds.

4. I therefore request that necessary sanction of Government required by the Accountant General may be obtained for the further investigation at an estimated cost of Rs.1200/-

I have the honor to be,
Sir,
Your most obedient servant,

J. S. Wesley Dale
13/5/22

Sanitary Engineer to Govt.

VSS/13-5-22.

13/5
Sir, see note below
13/5

Inspection Notes.

On

Bangalore

Date of Inspection 3-3-1920.

By: R. Stoney, Esquire.
Ag: Sanitary Engineer to Govt,
Madras.

× × ×

2. The Hassamar tank was inspected.

There is a very suitable site for building a new bund to give the storage Capacity required for the town water supply; quite a short length of bund is all that is necessary.

If after completion of the work it is found that any very material surplussing takes place, another small bund can be built to form an upper tank and thus increase the storage. With the heavy rainfall of the locality there should be no difficulty in getting an ample supply. The water would be taken by a gravitation main some seven miles in length to a Service reservoir on Lighthouse hill and will be distributed from there to the Town.

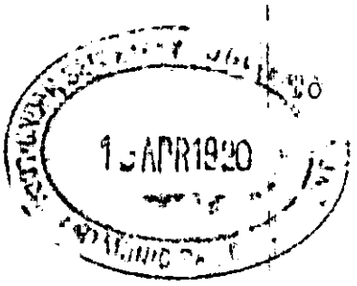
× × ×

True extract

M McIlgle.
Chairman B. C.

C 7033044

21. 4. 20



The Local and Municipal Department.

I send herewith extracts from Mr. Stoney's inspection note of the Mangalore water supply scheme. I shall be much obliged if the L. & M. and P.W.D. will treat the matter as urgent.. The Mangalore Municipal Council is anxious to go ahead with the scheme and, if the proposal is at all feasible, it is my intention to suggest to the council officially---as I have already done informally today---that it should start levying the water and drainage tax in anticipation of the regular plans and estimates.

Camp, Mangalore. 15th April 1920.

L & M Deptt

Please see entry in Col. 4 against item 76 on page 6 of G.O. No. 1970 M., dated 3rd December 1919. In October 19 the S.E. Report that the investigation of a scheme for water supply for the Mangalore town had practically been completed and a report awaited from the Assistant Sanitary Engineer. It is not known at what stage the matter is at present.

2. Is the H.M. wants that the

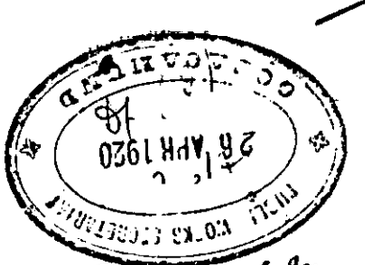
matter should be treated as urgent, the P. W. D. may be requested to state if the Sanitary Engr.'s report on the investigation has been received in that Deptt. If not, the Sanity. Engr. may be instructed to expedite it.

22.4.20. 22.4.20

22.4.

26.4.20

P. W. D. u.o.



P. W. D.

L bm no 3504-1 m
26-4-20

C No. 1676 Wks B
22.4.20.

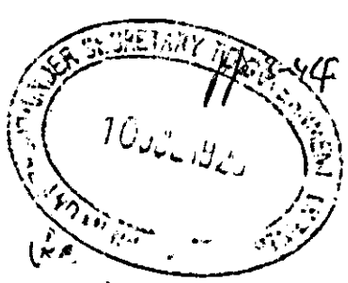
The report regd. in above has not yet been received in this deptt. The Sany. Engineer may be asked to say in what stage the matter is also told that the scheme should be expedited if it is ready & draft memo is submitted

1.5.20

6.5.20

P ICF memo to the Sany. Engr. No 1676 Wks/B/20-1 dy 10.5.20

P 4 CF CN° 2404 Wks B from —do— N° 617 g dy 2.7.20.



4/5/20

P his letter is dated 25.6.20.

Dy (Stewards/promised to furnish the report (with plans) in the course of a month & by the end of July 1920 may be sent to Lbm eco. with reference to their note above.

6.7.20 7.7.20 Lbm

9.7.20.

P W no 1676 Wks B 20.2
10.7.20

15.7.20

17

Ltm dept

The P. W.D. may be reminded about the middle of August '20.

13.7.20

14.7

The P. W.D may be requested to state if the Sanitary Engineer's report on the investigation of the water supply scheme, Mangalore has been received in that Dept. If not, the Sanitary Engineer may be instructed to expedite it.

20.8.20

21.8

P. W.D

P.W.D

A draft memo to the Sany. Engineer is submitted as the report has not yet been received.

27.8.20

28.8.20

30.8.20

Issued as memo No 1676 Wks/B/20-1 dt 10.5.20

CNo 2245 Wks/B from the Sanitary Engineer No 478 G dt 12.7.21.

Memo to the ——— do — No 2245 Wks/B/21-1 dt 25.10.21.

CNo 1628 Wks/B from the — do — 306 G dt 15-5-22

DS.

The investigation sanctioned in G.O. No 1162 M dt 7.7.17 has been carried out and the money provided therefor has also been fully spent. vide report on pp 5-9 C.F. A

15.6.20

5

18

D 2

A further investigation has been found necessary by the Chief Engineer and the Sanitary Engr. has accordingly been asked to arrange for it - vide memo onp 10 C.F.

2

Para 2 of G.O. no 1185 M of 27-8-20 relates the allotment or surrender of funds for connection with the investigation schemes already sanctioned by Govt. As the case in question is one of further investigation, the original investigation having been finished and the original provided for hence been spent, no fresh sanction appears necessary. The L.S.G. Dept may, therefore, be requested to accord the necessary sanction.

C.T.M.
30/5

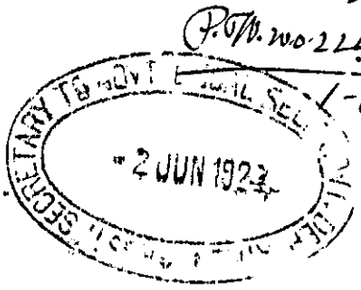
24
24-5-22

23/5/22

L.S.G.

J.D

P.W. no 2245 W&P-2
1-6-22



V.P.

L.S.G. (P.H.) Dept.

The draft order placed below 1534 is for approval.

2. The amount of Rs. 1200 required for further investigation has already been placed at the disposal of the P.W.D. and the work is now in progress - please see para 2 of the S.E.'s letter on pages 12+13 C.F. What is required now is only a formal approval of the C.E's proposals (pp 10+11 C.F.). Hence the draft.

Sd.
15.6.22

J.
B.N.R.
21/6

4/2
9/6

Q 1-3 1/2 x 16

Scott. II-10 (a)—48,962—2-2-22. (5)

L.S.S. (P.H.) DEPARTMENT.

	Date.	Initials.
When received for Fair-copying.		
When copied		
When examined		
When signed		
When despatched		

19 —

READ AGAIN G.O. No. 1162 m, dated 7. 7. 1922.

" " " " " " 192 .

READ ALSO—

C. No. 10854 From the , No. , dated 192 .

" " " " " " 192 .

" " " " " " 192 .

ORDER. Mis. No. 909 P.H. dated 29 — 6 — 1922.

The Govt. approve the proposals for a further investigation of the Mangalore water-supply scheme at an estimated cost of Rs. 1,200.

15.6.22

To

The Chief Engr., Mangalore
.. Comr. of S. Kanara
.. Sanit. Engr.
.. D.P.H.
.. P.W.D.